

4.3.19 Noise

Impact NOI-1: Exposure of Noise-Sensitive Land Uses to Noise from Construction of Water Conveyance Facilities

NEPA Effects: The potential for Alternative 4A to expose noise-sensitive land uses to noise from construction of the water conveyance facilities would be identical to impacts described under Alternative 4. Noise would be generated by heavy-duty equipment operating at the various construction sites, as well as by haul trucks and worker vehicles traveling on local roadways. Construction noise would also affect onsite workers. However, occupational exposure to noise levels in excess of 85 A-weighted decibels (dBA) requires monitoring and mitigation to protect workers. Given that onsite workers would be protected under OSHA requirements, no adverse impacts would occur to workers. Accordingly, this analysis focuses exclusively on potential noise effects to noise-sensitive land uses adjacent to construction activities.

Potential reasonable worst-case noise levels generated at construction work areas were evaluated against the 60 dBA L_{eq} (1hr) daytime (7 a.m. to 10 p.m.) and 50 dBA L_{max} nighttime (10 p.m. to 7 a.m.) construction thresholds. Construction noise along roadways was evaluated against the 12 decibel (dB) traffic noise threshold. As described under Alternative 4, the effect of exposing noise-sensitive land uses to noise increases above established thresholds at intake work areas, conveyance and associated facility work areas, utility construction work areas, borrow/spoil work areas, and truck trips and worker commutes would be adverse. Mitigation Measures NOI-1a and NOI-1b would be available to reduce this effect, but not to a level that would avoid adverse conditions.

CEQA Conclusion: Construction activities would expose noise-sensitive land uses adjacent to intake, conveyance, forebay, barge facility, utility, and borrow/spoil work areas to noise levels above the 60 dBA L_{eq} (1hr) daytime and 50 dBA L_{max} nighttime threshold. Receptors near haul roads would also be exposed to noise levels in excess of the 12 dB traffic noise threshold. This would be a significant impact. Mitigation Measures NOI-1a and NOI-1b, which require noise-reducing construction practices and development of a complaint/response tracking program, would reduce noise impacts on sensitive land uses. However, it is not anticipated that feasible measures will be available in all situations to reduce construction noise to levels below the applicable thresholds. This impact would therefore be considered significant and unavoidable.

Mitigation Measures NOI-1a and NOI-1b would reduce noise impacts on sensitive land uses. Although implementation of these measures will reduce the impact, it is not anticipated that feasible measures will be available in all situations to reduce construction noise to levels below the applicable thresholds. This impact would therefore be significant and unavoidable.

Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during Construction

Please see Mitigation Measure NOI-1a under Impact NOI-1a in the discussion of Alternative 4 in Chapter 23, *Noise*, of the Draft EIR/EIS.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please see Mitigation Measure NOI-1b under Impact NOI-1a in the discussion of Alternative 4 in
4 Chapter 23, *Noise*, of the Draft EIR/EIS.

5 **Impact NOI-2: Exposure of Sensitive Receptors to Vibration or Groundborne Noise from**
6 **Construction of Water Conveyance Facilities**

7 **NEPA Effects:** The potential for Alternative 4A to expose noise-sensitive land uses to vibration and
8 groundborne noise from construction of the water conveyance facilities would be identical to
9 impacts described under Alternative 4. Construction at the intake sites would involve use of impact
10 pile driving, and tunnel construction would involve the use of tunnel boring machines (TBMs) and
11 tunnel locomotives, both of which would cause groundborne vibration in localized areas.
12 Groundborne vibrations from pile driving would be intermittent, and temporary, occurring over a
13 two month period during the in-river work period (June 1 to October 31). Similarly, groundborne
14 noise due to vibrations from tunnel locomotive passbys and TBMs would occur intermittently where
15 tunnels are located under or near residential areas.

16 Vibration effects from pile driving were evaluated against a threshold of 0.2 inches per second peak
17 particle velocity (in/sec PPV) at residential buildings within 70 feet of pile driving sites. As
18 described under Alternative 4, groundborne vibration from impact pile driving is predicted to
19 exceed vibration thresholds at 78 residential receptors in Sacramento County and 4 residential
20 receptors in San Joaquin County. The effect of exposing sensitive receptors to groundborne vibration
21 would be adverse. Mitigation Measure NOI-2 is available to reduce this effect, but not to a level that
22 would avoid adverse conditions.

23 Vibration effects from tunneling locomotives and TBMs were evaluated against a threshold of 0.04
24 in/sec PPV. As described under Alternative 4, groundborne vibrations from the TBMs would not
25 exceed 0.008 in/sec PPV and would therefore not result in adverse vibration effects to nearby
26 sensitive receptors. Similarly, tunnel locomotives would be operated at slow speeds inside of
27 tunnels and would not result in excessive vibrations. Groundborne noise from tunnel locomotive
28 operation during construction is therefore not predicted to exceed groundborne noise thresholds or
29 result in an adverse noise impact on sensitive receptors along the tunnel conveyance.

30 As outlined in Mitigation Measure NOI-2, the potential for tunneling induced ground vibration
31 effects will be thoroughly analyzed in the preliminary and final design phases of the project, using
32 site-specific geotechnical data and the expected TBM configuration. Potential effects on surface
33 structures and human perception will be evaluated in detail during preliminary design. As
34 additional precautions, and where necessary, a ground vibration monitoring program using
35 seismographs and other high-precision equipment will be implemented during construction to
36 ensure ground vibration is within the required contract limits.

37 **CEQA Conclusion:** Groundborne vibrations during tunneling would not exceed 0.008 in/sec PPV and
38 would therefore be less than significant. Likewise, locomotives are not expected to generate
39 significant noise levels because they will travel at low speeds between 5 and 10 miles per hour.
40 However, the impact of exposing residential structures to groundborne vibration during intake
41 construction would be significant as reasonable worst-case modeling indicates that up to 82
42 residential parcels could be exposed to vibration levels in excess of 0.2 in/sec PPV during intake pile
43 driving. Although Mitigation Measure NOI-2 will reduce the impact, it is not anticipated that feasible

1 measures will be available in all situations to reduce vibration to levels below the applicable
2 thresholds. This impact would therefore be considered significant and unavoidable.

3 **Mitigation Measure NOI-2: Employ Vibration-Reducing Construction Practices during**
4 **Construction of Water Conveyance Facilities**

5 Please see Mitigation Measure NOI-2 under Impact NOI-1a in the discussion of Alternative 4 in
6 Chapter 23, *Noise*, of the Draft EIR/EIS.

7 **Impact NOI-3: Exposure of Noise-Sensitive Land Uses to Noise from Operation of Water**
8 **Conveyance Facilities**

9 **NEPA Effects:** The number and horsepower of pumping equipment at the intakes and combined
10 pumping plan directly influence the potential for operational noise impacts. Since the number and
11 horsepower of pumping equipment under Alternative 4A would be identical to Alternative 4,
12 operational noise levels under Alternative 4A would be the same as those analyzed for Alternative 4.
13 Since the analysis of Alternative 4 assumed 24 hours per day of pumping regardless of the pumping
14 scenario (e.g., H1) or year (e.g., 2060), impacts would be the same under the ELT and LLT
15 conditions.

16 Operation of pumping equipment at the intakes and combined pumping plant could result in
17 increases in noise levels affecting nearby communities and residences. Noise would also affect
18 onsite workers, although OSHA monitoring requirements would avoid adverse effects on personnel.
19 Accordingly, this analysis focuses exclusively on potential noise effects on noise-sensitive land uses
20 adjacent to the conveyance facilities.

21 Potential reasonable worst-case pump noise levels generated during operation of the intake and
22 pump structures were evaluated against the 50 dBA L_{max} daytime (7 a.m. to 10 p.m.) and 45 dBA L_{max}
23 nighttime (10 p.m. to 7 a.m.) operational thresholds. As described under Alternative 4, operational
24 activities would exceed the daytime and nighttime thresholds at noise-sensitive land uses within
25 2,000 feet and 2,600 feet, respectively, from intake locations. Various residential, recreational, and
26 agricultural receptors would therefore be exposed to adverse noise levels during operation.
27 Mitigation Measure NOI-3 is available to address this effect.

28 **CEQA Conclusion:** The impact of exposing noise-sensitive land uses during operations to noise
29 levels above the daytime (50 dBA L_{max}) or nighttime (45 dBA L_{max}) noise thresholds would be
30 considered significant. Based on reasonable worst-case modeling, 70 agricultural parcels would be
31 affected by daytime noise levels in excess of the operational threshold. The nighttime threshold
32 would be exceeded at 110 agricultural parcels. Mitigation Measure NOI-3 would reduce operational
33 noise levels below applicable thresholds, thus resulting in a less-than-significant level.

34 **Mitigation Measure NOI-3: Design and Construct Intake Facilities and Other Pump**
35 **Facilities Such That Operational Noise Does Not Exceed 50 dBA (One-Hour L_{eq}) during**
36 **Daytime Hours (7:00 A.M. to 10:00 P.M.) or 45 dBA (One-Hour L_{eq}) during Nighttime**
37 **Hours (10:00 P.M. to 7:00 A.M.) or the Applicable Local Noise Standard (Whichever Is**
38 **Less) at Nearby Noise Sensitive Land Uses**

39 Please see Mitigation Measure NOI-3 under Impact NOI-1a in the discussion of Alternative 4 in
40 Chapter 23, *Noise*, of the Draft EIR/EIS.

1 **Impact NOI-4: Exposure of Noise-Sensitive Land Uses to Noise from Implementation of**
2 **Proposed Environmental Commitments 3, 4, 6-10**

3 **NEPA Effects:** The potential for Alternative 4A to expose noise-sensitive land uses to noise from
4 implementation of Environmental Commitments 3, 4, and 6–10 would be similar to those described
5 for Alternative 4. Restoration and enhancement activities that require heavy-duty equipment and
6 construction vehicles would generate increases in ambient noise levels. The effect would vary
7 according to the type of construction equipment and techniques used in construction of the specific
8 environmental commitment, the location and timing of the actions called for in the environmental
9 commitment, and the noise environment at the time of implementation.

10 As described under Section 4.1, *Introduction*, of this RDEIR/SDEIS, the Yolo Bypass Fisheries
11 Enhancement (CM2) would not be completed under Alternative 4A. Similarly, Alternative 4A would
12 only restore up to 15,548 acres of habitat under Environmental Commitments 3, 4, and 6-10 as
13 compared with 152,639 acres under Alternative 4. Therefore, the magnitude of noise-generating
14 activities under Alternative 4A would likely be smaller than those associated with Alternative 4.
15 Nevertheless, receptors within 1,200 feet of an active restoration work area could be exposed to
16 construction noise in excess of the daytime (7 a.m. to 10 p.m.) noise threshold of 60 dBA L_{eq} (1hr).
17 The nighttime threshold of 50 dBA L_{max} would be exceeded within a distance of 2,800 feet. The effect
18 of exposing sensitive land uses to increases in construction noise levels above thresholds would be
19 adverse. Mitigation Measures NOI-1a and NOI-1b would be available to address this effect, but not to
20 a level that would avoid adverse conditions.

21 **CEQA Conclusion:** Noise levels during implementation of Environmental Commitments 3, 4, and 6-
22 10 are expected to vary according to the type of construction equipment and techniques used, but
23 may exceed the daytime noise threshold within 1,200 feet of an active restoration work area and the
24 nighttime threshold within 2,800 feet. The impact of exposing receptors to noise increases above
25 established thresholds would be significant. Mitigation Measures NOI-1a and NOI-1b, which require
26 noise-reducing construction practices and development of a complaint/response tracking program,
27 would reduce noise impacts on sensitive land uses. However, it is not anticipated that feasible
28 measures will be available in all situations to reduce construction noise to levels below the
29 applicable thresholds. This impact would therefore be considered significant and unavoidable.

30 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
31 **Construction**

32 Please see Mitigation Measure NOI-1a under Impact NOI-1a in the discussion of Alternative 4 in
33 Chapter 23, *Noise*, of the Draft EIR/EIS.

34 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
35 **Tracking Program**

36 Please see Mitigation Measure NOI-1b under Impact NOI-1a in the discussion of Alternative 4 in
37 Chapter 23, *Noise*, of the Draft EIR/EIS.